

MECHANICAL SPEEDOMETER DRIVE BOX

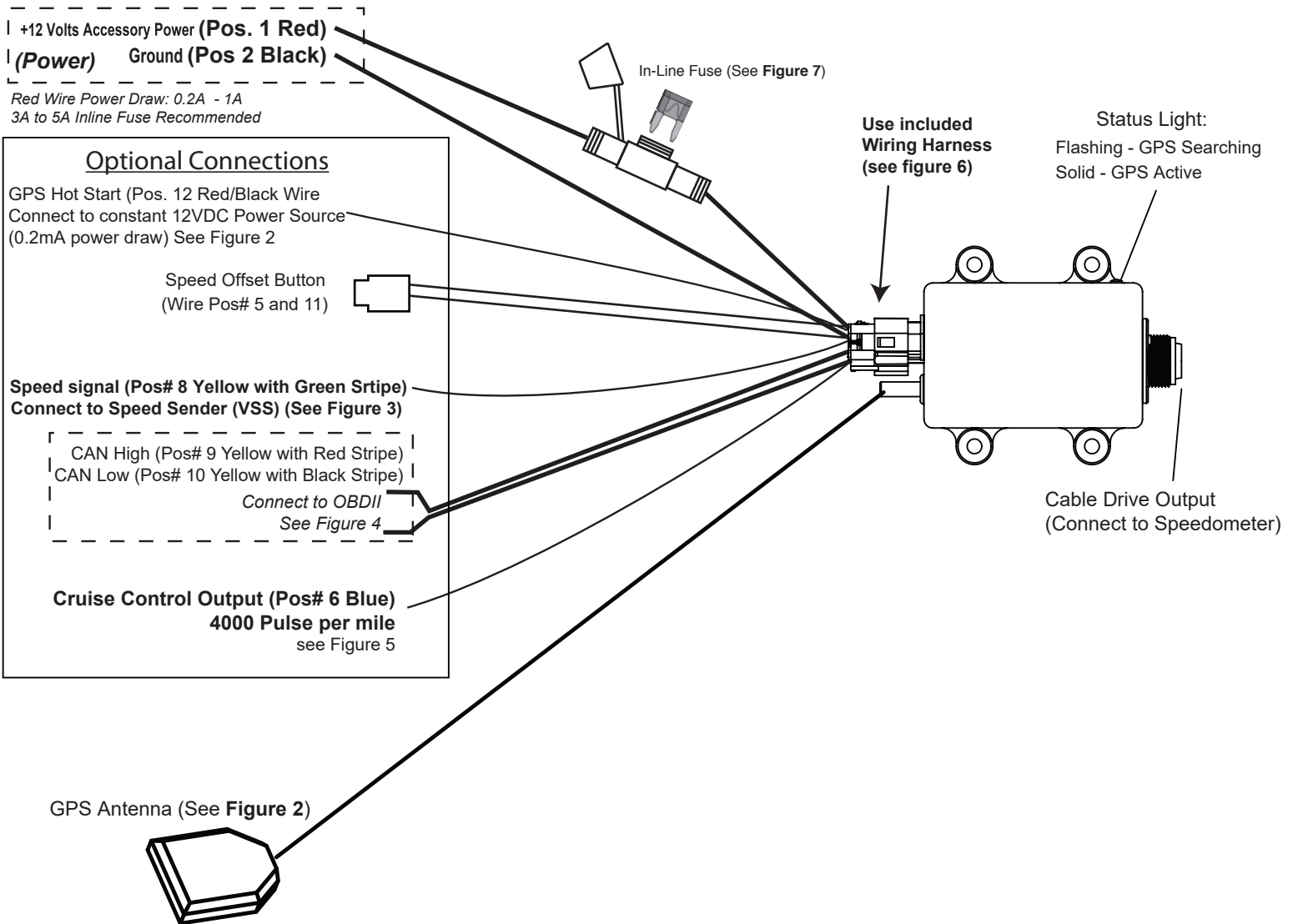
SPEEDBOX™ Mechanical Speedometer Drive Box.

The Speedhut Speedbox is designed to operate a cable-driven mechanical speedometer using an electric speed signal from GPS, CAN-Bus speed data through the OBDII, or Vehicle Speed Sensor (VSS). (The Speedbox is NOT waterproof)

Installation Instructions:

1. Disconnect negative (-) battery cable.
2. Connect the mechanical speedometer cable to the back of the Mechanical Speedometer.
3. Route the cable as straight as possible to meet up with the Speedbox™ in desired location. Sharp bends or kinks in the speedometer cable can cause too much resistance for the Speedbox™ to function properly.
4. Mount the Speedbox™ to the vehicle. (The Speedbox™ is NOT waterproof)
5. Plug included wiring harness to back of Speedbox™ and connect corresponding wires to their appropriate locations within the vehicle's wiring.
NOTE: You do not have to connect all signal types. Pick between GPS, CAN-Bus, VSS, or use a combination. The GPS will override the VSS or CAN-Bus. If GPS signal drops then the Speedbox will automatically use the (if connected) Vehicle Speed Sensor or the CAN-Bus as a back up.
6. Reconnect negative (-) battery cable.

FIGURE 1:

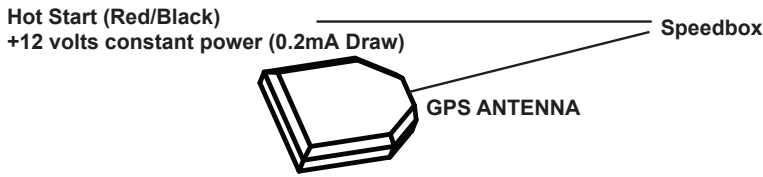


WARRANTY - Speedhut Inc. warrants to the consumer for a period of 5 years from the date of purchase that this product will be free from defects in materials or workmanship. Speedhut warrants to the consumer for a "LIFE-TIME" that the product circuit board will be free from defects in materials or workmanship. This warranty is limited to the repair or replacement of Speedhut Inc products. Speedhut Inc is not responsible for special, incidental or consequential damages or costs incurred due to the failure of this product. Modification to the product, improper use or installation, accident, water damage, abuse, unauthorized repairs or alterations voids this warranty. Speedhut Inc disclaims any liability for consequential damages due to breach of any written or implied warranty on all products manufactured by Speedhut Inc.

Please contact Speedhut Customer Support if you have a problem with this product | support@speedhut.com | 801-221-1460 (9am - 4pm MST)

R3-6/11

FIGURE 2: GPS Antenna and Hot Start Wire



VSS or CAN-Bus operation without GPS antenna:
The GPS antenna needs to be connected for initial VSS or CAN-Bus calibration, after the vehicle has been driven over 25mph, the signals will know the correct pulse rate and the GPS antenna can be disconnected.

1. Connect GPS receiver antenna into back of Speedbox.
2. For best performance, mount GPS antenna with as much view of sky as possible with the magnetic side facing the ground. The GPS antenna can receive signal through all thin materials except metal.
3. Hot start feature is optional. Connecting the hot start wire to constant +12volts allows GPS to quickly acquire satellites in less than 2 seconds. This feature saves your current satellite position within the Speedbox™ enabling it to quickly restore your position on power up when the Speedbox™ has been powered off.

NOTE: Please note that if the speedometer has been powered off longer than 4 hours, it could take up to 1 minute to acquire signal due to the satellites moving significantly from your location. This is normal.

Power Draw NOTE: The hot start current draw is extremely low (0.2mA) and will have virtually zero impact on a vehicle's battery charge. Hot start wire should be connected directly to battery +12voltage and should remain powered 100% of the time.

FIGURE 3: OPTIONAL Backup Connection - VSS (Requires GPS signal for calibration, See Figure 2)

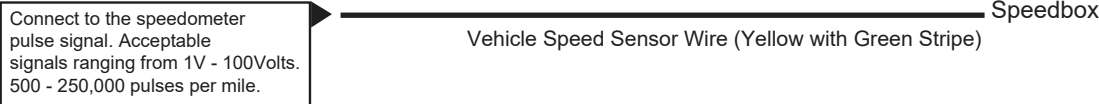


FIGURE 4: OPTIONAL OBDII Setup (Requires GPS signal for calibration, See Figure 2)

OBDII Note: Speedbox will not function when used in conjunction with any other OBDII device. Cycle the Speedbox power to restore proper function.

1. Connect power distribution requirements as shown in Figure 1. (Make sure that the vehicle battery is disconnected)
2. Connect the CAN High wire (Pos. 9) to the OBDII pin 6, Connect the CAN Low wire (Pos. 10) to the OBDII pin 14. (CAUTION: Do not connect to a OBDII system while powered doing so may throw a check engine code.)

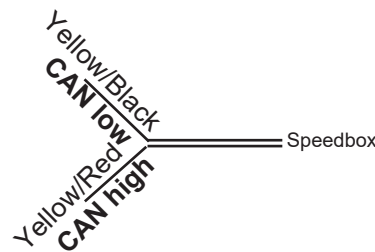
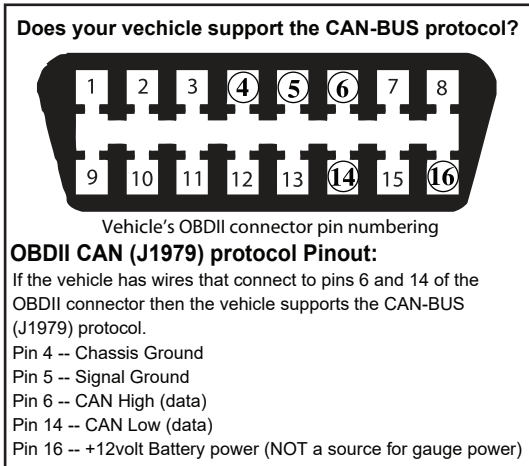


FIGURE 5: Open Collector output for aftermarket cruise control module connection.

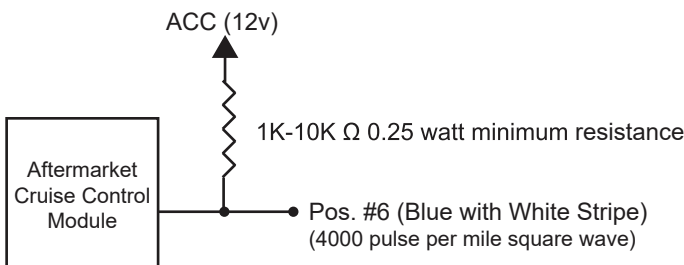
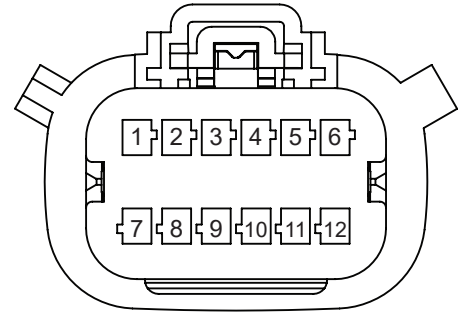


FIGURE 6: Wiring Harness Guide

(Power Draw: 0.2A - 1A, 3A to 5A Inline Fuse Recommended for +12V Accessory Power)

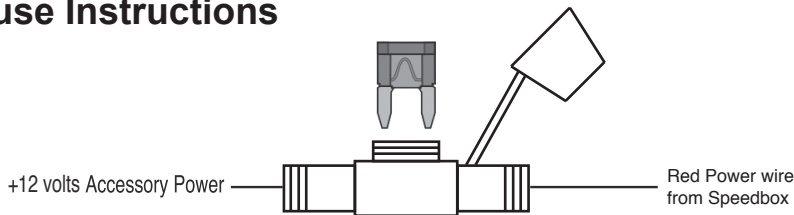
Pos.	Wire Color	Note
1)	Red	10-18v+ Switched (Ignition)
2)	Black	Vehicle Ground
3)	--	--
4)	--	--
5)	Black	Setup Button Ground
6)	Blue with White Stripe	Cruise Control Output (4000 pulse per mile)
7)	--	--
8)	Yellow with Green Stripe	Vehicle speed sensor(VSS)
9)	Yellow with Red Stripe	CAN High
10)	Yellow with Black Stripe	CAN Low
11)	Red	Setup Button (+)
12)	Red with Black Stripe	GPS 12v+ Constant*

DIAGRAM 1:



*GPS POWER DRAW NOTE (12v+ constant):
This Hot Start is used to help the GPS acquire signal in a shorter time. The hot start current draw is extremely low (0.2mA) and will have virtually zero impact on a vehicle's battery charge. Hot Start wire should be connected directly to battery +12V and should remain powered 100% of the time.

FIGURE 7: In-Line Fuse Instructions



Directions:

1. Make sure the 3 amp fuse is secure in the fuse holder.
2. Strip the wire ends.
3. Connect wiring as shown above.

Use included Butt Splice Connectors for the wiring connections.

Speed Offset (Optional)

Default calibration is 1000 turn/mile. Can be adjusted from 100 to 1650 turns/mile.

This will be done when the vehicle is parked. The Speedbox™ is factory set to work with most USDM Mechanical Speedometers. If the speed indicated on the speedometer is consistently off (+/- 10MPH) you can apply an optional Speed Offset. The Speed Offset feature can be used to dial in the accuracy.

IMPORTANT NOTE: The odometer will NOT be accurate when a Speed Offset is applied if the mechanical speedometer is out of calibration.

1. While the Speedometer is connected to the Speedbox™, turn the power on to the Speedbox™.
- Speed signal wire does not need to be connected.
2. Press and release the offset button, the Speedbox™ will ramp up to what 60 MPH should be.
3. Holding the button down will slowly move the speedometer pointer (needle) up, let go of the button then hold it down again to go the opposite direction.
4. Once you have moved the pointer to sit directly on 60 MPH, let go of the button.
- The Speedbox™ will store this setting and return to 0 MPH

Now the Speedbox™ will operate with the amount of cable turns-per-mile that your speedometer needs to show the correct speed.

IMPORTANT NOTE: If the speedometer is off then the odometer reading will be in-accurate, Speedhut recommends the speedometer be serviced and calibrated by a professional technician.